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A CROSS-SECTIONAL STUDY OF *JIHWA PARIKSHA* IN *SANDHIGATA VATA* WITH SPECIAL REFERENCE TO OSTEOARTHRITIS IN MIDDLE AGE GROUP PATIENTS

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ABSTRACT

Introduction: *Sandhigata Vata*, according to *Ayurveda*, arises as a result of an imbalance in the *Vata dosha*, one of the three fundamental energy forces governing the body. This *dosha* is associated with movement and plays a crucial role in joint function. When *Vata* becomes aggravated, it disrupts the normal functioning of the joints, leading to the manifestation of *Sandhigata Vata*. Recognizing *Sandhigata Vata* in its early stages is crucial. Early intervention can help manage joint pain and prevent it from becoming a chronic condition. Bearing that in mind, *Jihwa Pa*rikhsa of *Sandhigata Vata* patients is aimed at different features of tongue like colour, coating, fissures, texture & movements. **Aim:** To conduct *Jihwa Pariksha* in patients of *Sandhigata Vata* (Osteoarthritis). **Objective:** To study changes in *Jihwa* manifested in patients of *Sandhigata Vata* (Osteoarthritis) in middle age group (30 to 50 years). **Material & Methods:** *Jihwa* of 30 middle age grouped patients of *Sandhigata Vata* (Osteoarthritis) are observed for colour, coating, fissures, texture and movements. The patients are selected between the age of 30 to 50 years. **Conclusion:** Due to involvement of *ama* in the *samprapti*

of *Sandhigata Vata* thin & thick coating has been observed. And due to the predominance of *vata* dosha in the disease, the increased *guna* of *vata dosha* like *ruksha* and *khara* is observed in the form of fissures (varying in the numbers) and the texture of tongue observed as rough in majority of the patients. the colour, size/shape and the movement of tongue has not been affected in the patients and remains constant.

Keywords: *Jihwa, Sandhigata Vata*, Osteoarthritis, tongue examination, *Ashtavidha Pariksha*

INTRODUCTION:

- *Acharya Charaka,* has defined the importance of *Rogi Pariksha* by saying that the patient should be examined by *Pariksha* before any kind of treatment and the work of physician starts after that **[1]**. *Asthavidha Pariksha* (eight fold examination) in *Ayurveda*, mentioned by *Acharya Yog-Ratnakara* is one of the important examinations to find the various causes behind the diseases **[2]**. *Ashtavidha pariksha: Nadi* (Pulse), *Mootra* (Urine), *Malam* (Fecal matter), *Jihwa* (Tongue*), Shabdam* (Voice of patients), *Sparsham (*Touch), *Druk* (Eyes & Vision), *Akriti* (General body build). Among these, *Jihwa Pariksha* also plays an important role in *Rogi Pariksha*, *Ayurveda* considers the tongue as a map of your body. Every feature of the tongue represents an aspect of the constitution or of imbalance. Tongue acts as a mirror for the internal or unseen, functioning of the system. The colour of its coating can be a tool for understanding what imbalance is predominating in the body **[3]**.
- In *Ayurveda*, the disease *Sandhigata Vata* is described under *Vatavyadhi* in all the *Samhitas* and *Sangraha Granthas*. It is mentioned to have the clinical features like swelling in the joints and pain during the joint movements **[4]**. It is said to be caused by the excessive intake of *Vata Vrudhhi Kara Ahara* like *Katu, Tikta* and *Kashaya Rasa Pradhana Dravya* and *Ativyayama* (excessive strain or stress to the joints) or *Abhighata* (injuries). The disease may not show any *Poorvaroopa* But the clinical signs and symptoms include joint pain (*Sandhi Vedana*), Swelling over the joint (*Sandhi Shotha*), Air filled bag appearance (*Vatapoornadrutisparsha*), Pain and tenderness during the movements of the joints (*Prasarana akunchana pravruthi savedana*) **[5]**. Acharya Sushruta has added degeneration of the joint (*Hanti sandhi*) **[6]** where *Acharya Madhavkara* has added crakling sounds (*Atopa*) **[7]** as symptoms of *Sandhigata Vata.*
- The disease is comparable with osteoarthritis. Osteoarthritis is a degenerative joint disease due to the degradation of the joints, the articular cartilages and subchondral bone. It is caused by the mechanical stress to the joints and produces the symptoms like joint pain,

swelling, stiffness etc. Even though the disease effects any joint in the body, most commonly involved joints are major joints and weight bearing joints of the body like hip and knee joint. Due to the life style, Indians suffers from knee joint osteoarthritis whereas western country suffers from hip joint osteoarthritis commonly **[8]**. Osteoarthritis is the second most common rheumatologic problem and it is the most frequent joint disease with a prevalence of 22% to 39% in India **[9]**. The incidence of this disease increases with the age and the prevalence is more in females (25%) when compared to the males (16%). Almost all persons by Age 40 have some pathologic change in weight bearing joint. The reported prevalence of Osteoarthritis from a study in rural India is 5.78%. Obesity, Occupational knee bending, Physical labour etc., are some of the predisposing factors for the disease. It has become one of the major causes for the knee replacement surgeries **[10]**.

NEED OF STUDY:

- *Sandhigata Vata* is one of the chronic, degenerative, inflammatory disease which has great impact on quality of life of an individual. In Allopathic science, the scientists believe that once the disease Osteoarthritis has taken place, then it is very difficult to reverse or block that disease process. Till date, no treatment is available that can reverse or slow or block the disease process. It has become one of the major causes for the knee replacement surgeries **[11]**.
- Tongue reflects what is happening inside a body and it reflects the overall digestive, nutritive, and metabolic conditions of body. Tongue examination is an easy and indispensable part to know *Sama*, *Nirama* and *Vriddhi*, *Kshaya Awastha* of *Dosha*, finally in the diagnosis of disease. It is one of the important examination tool mentioned in *Ayurveda* but not backed by documented scientific research. So for the diagnosis of disease *Sandhigata Vata*, tongue examination can be very usefool diagnostic tool. In this study, an effort will be made to analyze the changes in *Jihwa* due to *Sandhigata Vata* and this work will be unique contribution in *Ayurveda*.

AIM & OBJECTIVE:

Aim: To conduct *Jihwa Pariksha* in patients of *Sandhigata Vata* (Osteoarthritis).

Objective: To study changes in *Jihwa* manifested in patients of *Sandhigata Vata* (Osteoarthritis) in middle age group (30 to 50 years).

MATERIALS & METHODS:

Materials: Review of '*Jihwa Pariksha'* has been collected from all *Samhitas*. Literature Review of Osteoarthritis had been collected from modern texts. Literature such as various research papers, journals and

different text of modern science has been referred.

Type of Study: Observational study.

Details of Clinical Study: Observational trial on 30 diagnosed patients of *Sandhigata Vata* (Osteoarthritis) having middle age (30 to 60 years) had been taken for research study.

Source of Data: The source of collection of patients has been from IPD and OPD of Parul Ayurved Hospital and Khemdas Ayurved Hospital, Limda, Vadodara.

Data Collection: Separate case paper Performa had been prepared and observations were noted.

IEC Certificate No: PU/PIA/IEC/07/2023/268

Inclusion Criteria:

1) Selection of patients has been done irrespective of gender, socio-economic status.

2) Patients suffering from *Sandhigata Vata* (Osteoarthritis) as a *Swatantra Vyadhi*.

3) Patients between the age of 30 to 50 years has been included.

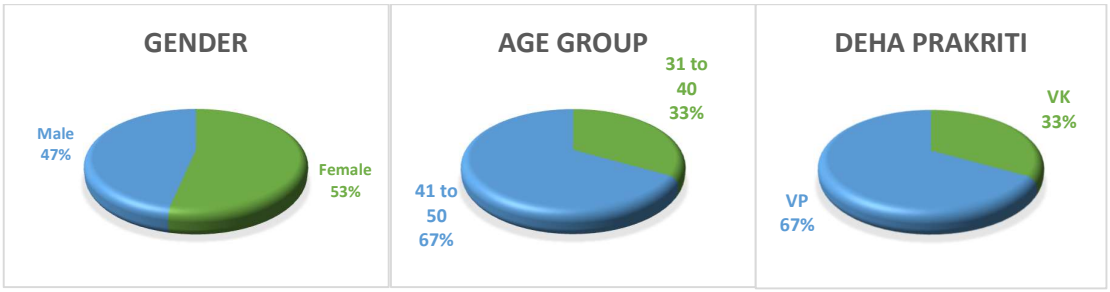
Exclusion criteria:

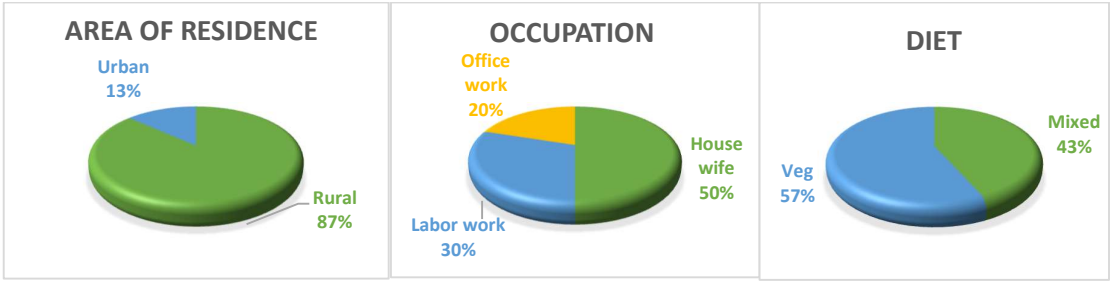
1)Patient with local tongue infection and congenital anomalies will be excluded.

2)Patients having major ailments of other systems. E.g., AIDS, carcinoma of any organs, pregnancy, Hepatitis B, Hepatitis C, Tuberculosis at the time of enrolling the patient.

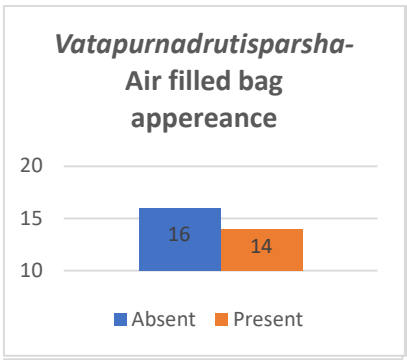
OBSERVATION:

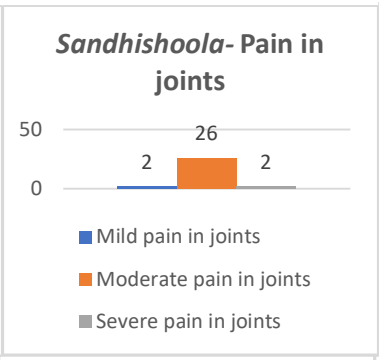
According to Demographic data:

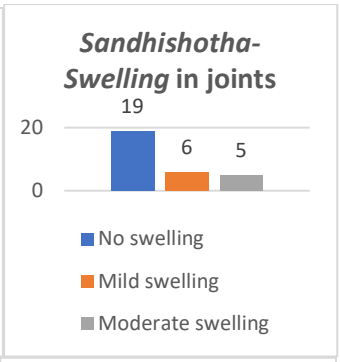


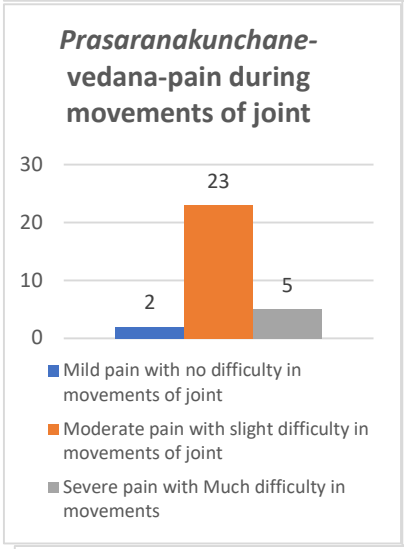


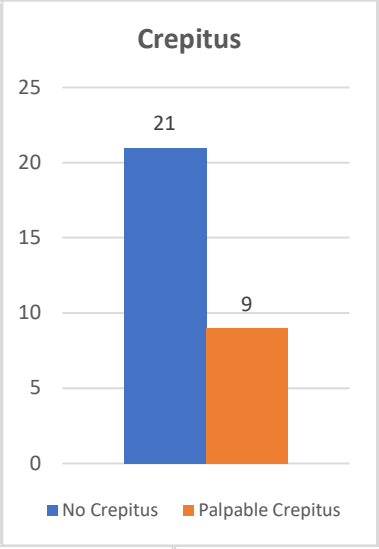
Division Of Patients According To *Lakshana* of *Sandhigata Vata*:

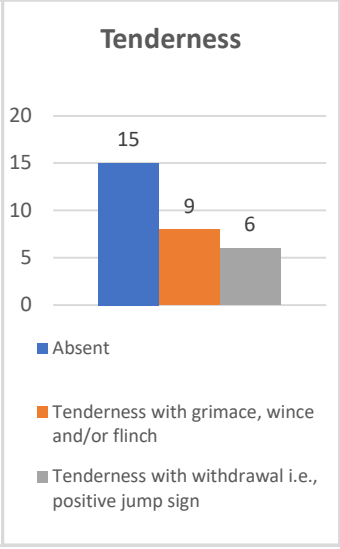


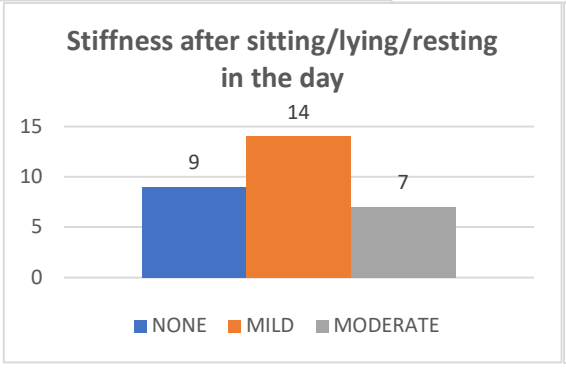


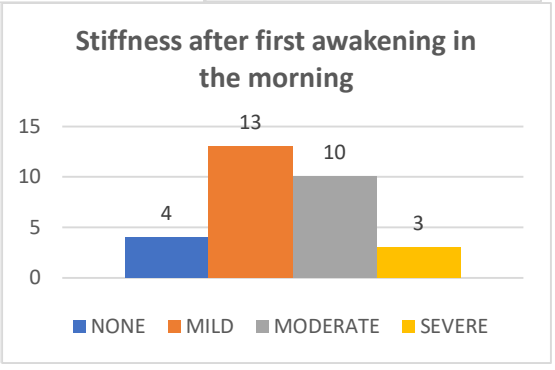












Chi- square test of association of Disease *Sandhigata Vata* & Changes on *Jihwa*

Colour of *Jihwa*				Test Statistics
	Observed N	Expected N	Residual	This variable is constant. Chi-Square Test cannot be performed.
Normal (Pink)	30	30.0	0.0	
Total	30			

Coating of *Jihwa*			
	Observed N	Expected N	Residual
No coating	1	7.5	-6.5
Patchy coating	1	7.5	-6.5
Thin coating	17	7.5	9.5
Thick coating	11	7.5	3.5
Total	30		

Test Statistics	
Coating of *Jihwa*	
Chi-Square	24.933[a]
df	3
Asymp. Sig. (P value)	<.001

No. of fissures			
	Observed N	Expected N	Residual
No fissures	12	7.5	4.5
Ranging from 1-3 in number	15	7.5	7.5
Ranging from 4-10 in number	1	7.5	-6.5
More than 10 fissures	2	7.5	-5.5
Total	30		

Test Statistics	
No. of fissures	
Chi-Square	19.867[a]
df	3
Asymp. Sig. (P value)	<.001

Texture of *Jihwa*			
	Observed N	Expected N	Residual
Normal surface	9	10	-1
Mild rough surface	21	10	11
Total	30		

Test Statistics	
Texture of *Jihwa*	
Chi-Square	18.200[a]
df	2
Asymp. Sig.	<.001

Shape/Size of *Jihwa*			
	Observed N	Expected N	Residual
Normal surface	30	30.0	0.0

Test Statistics
This variable is constant. Chi-Square Test cannot be performed.

Movement of *Jihwa*			
	Observed N	Expected N	Residual
Movements of tongue not affected	30	30.0	0.0

Test Statistics
This variable is constant. Chi-Square Test cannot be performed.

DISCUSSION ON DISEASE *SANDHIGATA VATA*:

Sandhigata vata is described under *Vatavyadhi* in all the Samhita and Sangraha Grantha. In *Vriddhavastha*, all Dhatus undergo *Kshaya* that led to *Vataprakopa* and making individual prone to many diseases. Among them *Sandhigata vata* stands prior in the list.

Some probable structures and factors responsible for formation and function of *Sandhi*:

Vata: According to Acharya Charaka Vayu is *Ruksha* (Dry), *Shita* (Cold), *Laghu* (Light), *Sukshma* (Subtle), *Chala* (Unstable), *Vishada* (Clear), *Khara* (Rough), and *Daruna* (Hard). It is also *Yogavahi* – Conducting agent **[12]**. *Vata* in normal state controls all the activities of the

body. *Gati* is the unique feature of *Vayu*. The commentator Gayadas states that because of constant movement of *Vayu*, a particular seat cannot be attributed to it and due to sameness in motion, sites which are more mobile can be considered as its seat **[13]**. Most body movements occur at *Sandhi*, hence they may be considered as site of *Vata*. Also *Asthi* is one of the important seat of *Vayu* as there is *Ashraya-ashrayi* bhava between *Asthi* and *Vayu*. Sandhi is the joining place of two or more *Asthi* hence it is the site of *Vata* too.

Vyanavayu is seated at *Hridaya* and circulates in all over the body. And that controls most of the motor functions & is responsible for all the movements of *Sandhi* like *Akunchana Prasarana* etc. **[14]** Being controller of motor functions of Skeleton and *Sandhi* in its physiological condition, the same is responsible for the pathological state of *Sandhi* in its vitiated state, i.e. *Sandhigata Vata*.

Kapha: *Shleshaka Kapha* is described to be situated in the *Sandhi* **[15]** and lubricates the *Sandhi* to perform the movements in the normal directions **[16]**. *Shleshaka Kapha* is located by the support of *Shleshmadharakala* in *Sandhi* and does its functions.

Vyanavayu may also have a close relationship with *shleshaka Kapha* because of its seat being *Sandhi* **[17]**. Whenever the *Vyanavayu* attains some pathologic condition and simultaneously some *sthana vikriti* or *Khavaigunya* at *Sandhi* occurs may be primary or secondary lead to the disease *Sandhigata vata*.

Some *Dhatus* and Structures also have close relation with *Sandhi* and so in the production of the disease *Sandhigata Vata*:

Mamsa: *Lepana* is the *Mala* function of *Mamsa Dhatu*, so if covers the *Sandhi* and its *Kshaya* causes *Sandhishula* **[18]**.

Meda: It is the *Mula Sthana* of *Asthivaha Srotas*. It is *Snigdha Dhatu*, therefore performs the function of *Snehana*. It provides nutrition to *Asthi Dhatu*, *Meda Kshaya* brings about *Sandhisunyata* **[19]**.

Asthi: *Asthi* is the hardest *Dhatu* in the body performing the main function of support to the body. Acharya Sushruta has illustrated that body is supported and kept erect by the firm *Asthi* which are found in its inside as trees are supported by the hard core inside their trunks **[20]**. *Asthi* is the prime seat of *Vata* as an important part of *sandhi*.

Majja: The function of *Majja* is to fill *Asthi* which is the *Mulasthana* of *Majjavaha Srotas*. Also *Sandhi* is the *Mulasthana* of *Majjavaha Srotas* **[21]**. While describing *Medodharakala*, Sushruta says that the fatty substance present in large *Asthi* is called *Majja*. Thus, the *Kshaya* of *Majja* increase *Akasha Mahabhuta* in the *Asthi* which Aggrevates *Vata* resulting in *Sandhishula*. It

is mentioned that *Majja Kshaya* makes the person afflicted by *Vatik Roga*.

Shukra: It is the *Dhatu* which is responsible for reproduction of every tissue in the body. Acharya Kashyapa says that with the help of *Prana*, after *parivestana* of *Bija* by *Rakta*, *Bija Dhatu* gets transformed into *Asthi*, thus *Asthi* develops from *Sukra*.

Charaka has described the *Lakshana* of *Shukrasara* person as they are having *stut Parshni Gulpha*, *Janu*, *Asthi*, *Nakha* and *Teeth*. This quotation denotes that there is relation between *Sukra* and *Asthi*.

Oja: *Oja* is the cream of all *Dhatu* and its *Kshaya* causes *Sandhivislesha.*

Lakshana of *Sandhigata Vata* given by different *Acharyas*

SR.NO	*LAKSHANA*	CHA.	SU.	A.S.	A.H.	B.P.	Y.R.	M.N
1	*Shoola*	-	P	-	-	P	P	P
2	*Shotha*	P	P	-	-	P	P	-
3	*Vatapurnadrutisparsha*	P	-	P	P	-	-	P
4	*Hanti sandhi*	-	P	-	-	P	P	-
5	*Prasarana-akunchane Vedana*	P	-	P	P	-	-	-
6	*Atopa*	-	-	-	-	-	-	P

Discussion on demographic data:

1. Gender- In 30 patients of *Sandhigata Vata*, 16 (53.3%) patients were female where 14 (46.7 %) patients were male.

2. Age Group- In 30 patients of *Sandhigata Vata*, 10 patients were found in age group of 31-40 & 20 patients were found in age group of 41-50.

3. Prakruti- In 30 patients of *Sandhigata Vata*, 10 (33.3%) patients had *Vata-Kapha Prakruti* and 20 (66.7%) patients were *Vata-Pitta Prakruti*, so patients have *Vata Pitta Prakruti*.

4. Area of residence: In 30 patients of *Sandhigata Vata*, 26 (86.7 %) patients were resided in Rural area where 4(13.3 %) patients were from urban area.

5. Occupation: In 30 patients of *Sandhigata Vata*, 15(50%) patients were housewife, 9 (30 %) patients were doing labour work and 6 (20 %) patients were doing office work.

6. Diet: In 30 patients of *Sandhigata Vata*, 13 (43.3%) patients having Mixed diet where 17 (56.7 %) patients having Vegetarian diet.

Discussion on Symptoms of *Sandhigata Vata*:

The prevalence of symptoms were as follows: 14 patients (53.3 %) were found air filled bag appearance in joints (*Vatapurnadrutisparsha*); 2 (6.7%)patients were found with mild pain, 26 (86.7%) patients were found with moderate pain, 2(6.7%) patients were found with severe pain in joints(*sandhishoola*); 19(63.3%) patients were found with no swelling, 6(20%) patients were found with mild swelling, 5(16.7%) patients were found with moderate swelling in joints (*Sandhishotha*); 2(6.7%) patients were found with mild difficulty in movements of joint, 23(76.7%) patients were found with moderate pain with slight difficulty in movements, 5(16.7%) patients were found with severe pain with much difficulty in movements (*Prasaranakunchane vedana*); 21(70%) patients found with no crepitus, 9(30%) patients were found with palpable crepitus; 15(50%) patients were found with no tenderness, 8(26.7%) patients were having tenderness with grimace, 6(20%) patients were having tenderness with withdrawal, 1(3.3%) patients were having tenderness with superficial palpation or gentle percussion; 4(13.3%) patients were having no stiffness, 13(43.3%) patients were having mild stiffness, 10(33.3%) patients were having moderate stiffness, 3(10%) patients were having severe stiffness after first awakening in the morning; 9(30%) patients were having no stiffness, 14(46.7%) patients were found mild stiffness, 7(23.3%) patients were found moderate stiffness after sitting/lying/resting in the day.

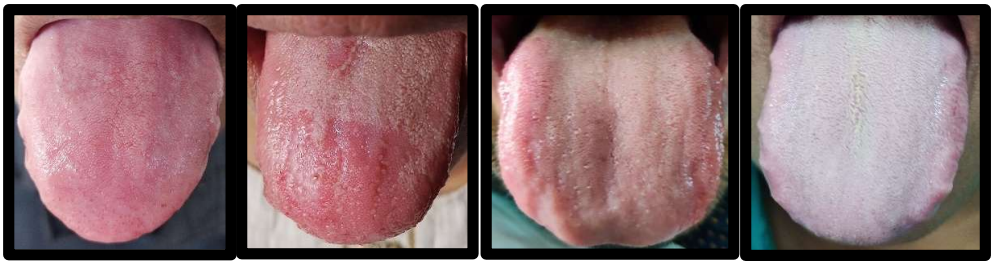
Discussion of Changes found on *Jihwa*:

7. Colour of the *Jihwa*-

There are only normal (pink) colour of tongue is seen in all 30(100%) patients which were included in the study. i.e., there is no significance association between *Sandhigata Vata* and colour of *Jihwa*.

8. Coating of *Jihwa*-

The thin coating is seen amongst 17(56.67%) patients, thick coating in 11(36.67%) patients, no coating in 1(3.3%) patient and patchy coating in 1(3.3%) patient has been seen in the included patients. by using Chi-square test of association there was significant changes were found in coating of *Jihwa*.



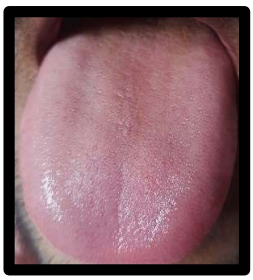
No coating Patchy Coating Thin Coating Thick Coating

As *kapha dosha* & *Meda dhatu* were produced in excess it has caused obstruction and did not nourished the *Uttrotar dhatus* leading to *Kshaya*. The excessive *kapha dosha* and *meda dhatu* caused *Aavarana* of *Vata*. This vitiated *Vata* when settled down in joints it has produced *Sandhigata Vata*. By the *avarana* of *kapha dosha* and *meda dhatu* the coating of *Jihwa* has took place which has been reflecting in this study **[12]**.

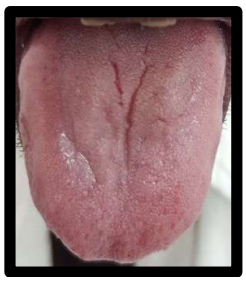
9. Fissures on *Jihwa* & 10. Texture of *Jihwa*

There were no any fissures on tongue seen in 12(40%) patients, 1-3 fissures were seen in 15(50%) patients, 4-10 fissures were seen in 1(3.3%) patient and more than 10 fissures were seen in 2(6.67%) patients which were included in the study.

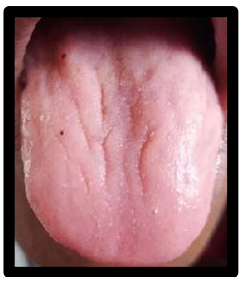
There was normal surface of tongue seen in 9(30%) patient & mild rough surface of tongue seen in 21(70%) patients which were included in the study. By using Chi-square test of association there was significant relation was found in fissures on *Jihwa* & texture of *Jihwa*.



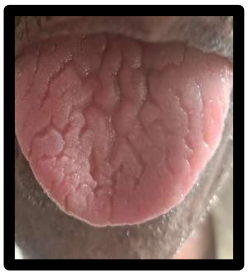
No fissure



1-3 fissures



4-10 fissures



>10 fissures

The reason behind is,*Vata Dosha* is Dry, light, cold, rough, subtle, constant, lubricates movement, dry slippery in nature. In *Sandhigata Vata*, *Vata* predominance occurs with decrease *Kapha* and impaired *Agni*. So *Dhatus* not produced at their best which ultimately leads to degeneration. As *Kapha* is decreased, the *Shieshmak-kapha* in joints also depletes resulting in *Kshaya* of *Asthisandhi*. Further continues adulging of *Vata* aggravating factors leads to *Sthanasamshraya* of *Prakupita Vata* in the *Khavaigunyayukta sandhi*. This localized *Vayu* due to its *Ruksha*, *Laghu*, *Kharadi Guna* results in *Sandhigata Vata*. Due to this dry and rough properties of aggravated *vata dosha* it is being reflected on the tongue of the included patients in the form of fissures and rough texture over the dorsal surface of tongue.

11.Movement of *Jihwa*-

- There are normal movement of tongue is seen in all 30(100%) patients which are included in the study. i.e., there is no significant relation between *Sandhigata Vata* and movement of *Jihwa*.

CONCLUSION:

Jihwa Pariksha is a powerful diagnostic tool in Ayurveda that provides valuable information about a person's *Dosha* constitution, digestive health, presence of toxins, and overall systemic health. It plays a crucial role in designing personalized treatment plans and maintaining optimal health according to Ayurvedic principles. In this present study, Out of 30 patients of *Sandhigata Vata*, 17(56.67%) patients are found with thin coating over *Jihwa*, 15(50%) patients were found with 1-3 fissures on the *Jihwa*, 20(66.67%) patients were found with Mild rough surface on touch over the *Jihwa*. By the involvement of *Ama* in the *samprapti* and general properties of *Vata Dosha* (*ruksha* & *khara*), this kind of changes has been observed over *Jihwa*. These all makes the result significant and proves that *Sandhigata Vata* in middle age grouped patients have relation with the changes on *Jihwa* both clinically as well as statistically.

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